REMARKS

Claims 1-5 and 30-44 are pending. Claims 1-5 and 30-44 stand rejected. Claims 1, 2, 42 and 43 have been amended. In view of the amendments and the remarks below, Applicants respectfully request that the rejections be withdrawn and the claims be allowed.

Claims 1-4, 34, 38, 39 and 41-43 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,623,145 to Nuss ("Nuss"). The rejection is respectfully traversed.

Claim 1 relates to a method of detecting an explosive material or composition. Claim 2 also relates to a method of detecting an explosive material. Both claims 1 and 2 have been amended to recite the additional step of "adjusting the detected radiation signal to compensate for the effect of the surrounding material." This additional step is supported throughout the specification and figures of the application, but finds particular support in paragraphs [0011], [0023] and [0039] of the specification, and in figures 6, 7, 9 and 11-14 and their associated description. As disclosed in the application, the adjustment may, for example, include the taking of a differential of the detected spectral signature, thus better enabling the detection of explosive materials. As explained below, Nuss fails to teach or suggest at least this element of claims 1 and 2.

Nuss relates to a method and apparatus for terahertz imaging. The system of Nuss can differentiate between different materials by analysis of the frequency-dependent absorption, dispersion and reflection of THz signals. Nuss, col. 2, ll. 30-31. However, Nuss does not teach that certain materials, such as water, can mask the presence of target materials (e.g., explosives) by affecting the frequency spectrum of the detected THz radiation. Thus, Nuss also fails to teach that this masking effect can be compensated for by adjusting the detected signal via, for example, taking the derivative of the signal, thus allowing the detection of target materials despite the presence of masking materials. For at least this reason, Nuss fails to teach or suggest each element and limitation of claims 1 and 2. Claims 1 and 2, then, are allowable over Nuss. Claims 3, 4, 34, 38 and 39 depend from claim 1 and are allowable for at least the same reasons that claim 1 is allowable.

Claim 41 depends from claim 2 and is allowable for at least the same reasons that claim 2 is allowable.

Claims 42 and 43 both recite an explosive detection apparatus that includes an "analyser for adjusting the detected radiation signal to compensate for the effect of the surrounding material and to determine if one or more predetermined features of an explosive material exists." As explained above, Nuss does not teach or suggest "adjusting the detected radiation signal to compensate for the effect of the surrounding material." Nuss is silent regarding the technical challenges involved in the differentiation of explosive materials from materials surrounding the explosive material.

For at least these reasons, claims 1-4, 34, 38, 39 and 41-43 are not rendered unpatentable by Nuss, and are instead allowable. Applicants respectfully request that the rejection be withdrawn and the claims be allowed.

Claims 5, 30-33 and 44 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nuss in view of U.S. Patent Application Publication No. 2001/0033636 to Hartick et al. ("Hartick"). The rejection is respectfully traversed.

Claim 30 depends from claim 1, which, as explained above, is allowable over Nuss. Claims 5 and 31-33 depend from claim 2, which is also allowable over Nuss, as explained above. Claim 44 depends from claim 42, which is allowable over Nuss as explained above. Thus, Nuss fails to render claims 5, 30-33 and 44 unpatentable. Hartick also fails to remedy the inadequacies of Nuss.

Hartick relates to a method and apparatus for detecting explosives in luggage. Hartick, Abstract. However, Hartick fails to teach or suggest a method that includes adjusting the detected radiation signal to compensate for the effect of the surrounding material. Instead, the Hartick method only determines whether detected radiation indicates the presence of an explosive; the Hartick method does not explore the technical difficulties associated with differentiating between detected radiation arising from an explosive material or composition and detected radiation arising from surrounding material.

Because neither Nuss nor Hartick teaches each element of the independent claims from which claims 5, 30-33 and 44 depend, claims 5, 30-33 and 44 are allowable over the cited combination. Applicants respectfully request that the rejection be withdrawn and the claims be allowed.

Claims 35-37 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nuss in view of Hartick and U.S. Patent No. 6,605,808 to Mickan et al. ("Mickan"). The rejection is respectfully traversed.

Claims 36 and 37 depend from claim 1. Claim 35 depends from claim 2. As explained above, neither Nuss nor Hartick teach or suggest each limitation of claims 1 and 2, and thus claims 35-37. Additionally, as explained below, Mickan fails to remedy the shortcomings of both Nuss and Hartick.

Mickan, which also relates to a diagnostic apparatus that uses terahertz radiation, is silent regarding the use of the Mickan apparatus to differentiate radiation received from the target object from radiation received from surrounding objects. Though the Mickan apparatus may be used for, *inter alia*, chemical analyses (*see* Mickan, col. 1, ll. 9-12), there is no mention in Mickan about the technical challenges involved in the differentiation of explosive materials from surrounding materials. Specifically, Mickan does not teach or suggest the act of adjusting the detected radiation signal to compensate for the effect of the surrounding material.

Because the cited combination fails to render unpatentable claims 1 and 2 from which claims 35-37 depend, claims 35-37 are allowable over the cited combination. Applicants respectfully request that the rejections be withdrawn and the claims be allowed.

Claim 40 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Nuss in view of U.S. Patent No. 36,201RE to Miller ("Miller"). The rejection is respectfully traversed.

Claim 40 depends from claim 1. As explained above, claim 1 is not rendered unpatentable by Nuss for at least the reason that Nuss fails to teach or suggest the step of "adjusting the detected

radiation signal to compensate for the effect of the surrounding material." As explained below, Miller also fails to teach at least this element of claim 1, and hence, claim 40.

Miller is cited in the Office Action as teaching the detection of explosives by use of a time of flight ("TOF") method. Office Action, p. 6. However, no where does Miller explain that the Miller device is used to differentiate between explosive material and the materials surrounding the explosive materials. Specifically, Miller does not teach or suggest the act of adjusting the detected radiation signal to compensate for the effect of the surrounding material. Therefore, Miller also fails to remedy the shortcomings of Nuss.

Because neither Nuss nor Miller, individually or combined, teach each of the elements and limitations of claim 1 (from which claim 40 depends), claim 40 is allowable over the cited combination. Applicants respectfully request that the rejection be withdrawn and that the claim be allowed.

In view of the above amendment, Applicants believe the pending application is in condition for allowance.

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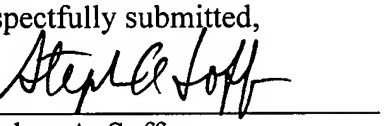
Respectfully submitted,

By 

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